

## Amendments to the Claims:

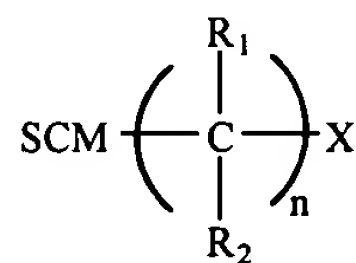
51. (Currently Amended) A method of detecting at least one hybridization complex comprising a target nucleic acid, said method comprising:
- a) adding a target nucleic acid to an array to form at least a first hybridization complex, said array comprising a solid support having a plurality of regions, each region comprising an electrode and a self-assembled mixed monolayer comprising
    - i) blocking moieties, having a first end attached to said electrode, wherein said blocking moieties shield nucleic acids from said electrode; and
    - ii) at least one modified nucleic acid comprising a nucleic acid and a linker moiety having a first and second end; wherein said first end of said linker is attached to said electrode and said second end is covalently attached to said nucleic acid;
- wherein at least two different regions comprise different probe nucleic acids;
- b) adding an agent that distinguishes between single and double stranded nucleic acids; and
  - c) detecting the presence of said first hybridization complex.

52. (Currently Amended) A method according to claim 51, wherein said first end of said blocking moieties is attached to said electrode via a sulfur linkage.

53. (Currently Amended) A method according to claim 52, wherein said first end of said linker is attached to said electrode via a sulfur linkage.

54. (Currently Amended) A method according to claim 51, 52, or 53, wherein said electrode comprises gold.

55. (Currently Amended) A method according to claim 51, wherein said blocking moieties have the formula:



wherein

SCM is a sulfur-containing moiety, wherein said sulfur containing moiety is attached to said electrode;

R<sub>1</sub> and R<sub>2</sub> are independently selected from the group consisting of hydrogen and substituent groups;

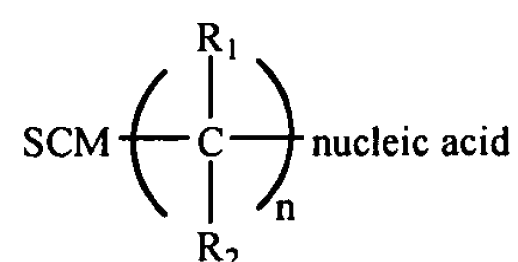
n is an integer from 3 to 50; and

X is a terminal group.

56. (Currently Amended) A method according to claim 55, wherein R<sub>1</sub> and R<sub>2</sub> are hydrogen.

57. (Currently Amended) A method according to claim 56, wherein said blocking moieties comprise alkyl groups.
58. 61 (Currently Amended) A method according to claim 54, 55, or 56, wherein  $n$  is  $\geq 6$ .
59. (Currently Amended) A method according to claim 51, wherein said blocking moiety is a branched molecule.
60. (Currently Amended) A method according to claim 59, wherein said blocking moiety is a straight chain alkyl group.
61. (Currently Amended) A method according to claim 60, wherein said alkyl ranges from 1 to 20 carbon atoms.
62. (Currently Amended) A method according to claim 51, wherein said array comprises a plurality of different blocking moieties.
63. (Currently Amended) A method according to claim 62, wherein at least one of said blocking moieties is a branched molecule.
64. (Currently Amended) A method according to claim 66, 62 or 63, wherein at least one of said blocking moieties is an alkyl group.
65. (Currently Amended) A method according to claim 55, wherein for said blocking moiety,  
SCM is a thiol containing moiety;  
 $R_1$  and  $R_2$  are hydrogen;  
 $n$  is 16; and  
 $X$  is hydroxyl.
67. (Currently Amended) A method according to claim 51, wherein said linker moiety is a straight chain alkyl group.
68. (Currently Amended) A method according to claim 67, wherein said alkyl group ranges from 1 to 20 carbon atoms.
69. (Currently Amended) A method according to claim 51, wherein for said linker moiety,  
SCM is a thiol containing moiety;  
 $R_1$  and  $R_2$  are hydrogen;  
 $n$  is 16; and  
 $Y$  is oxygen.
71. (Currently Amended) A method according to claim ~~[[70]]~~ 69, wherein  $R_1$  and  $R_2$  are hydrogen.

72. (Currently Amended) A method according to claim [[51]] 55, wherein n is  $\geq 6$ .
74. (Currently Amended) A method according to claim 51, wherein said blocking moiety comprises a phosphorus-containing moiety.
75. (Currently Amended) A method according to claim 51, wherein said nucleic acid is attached to said linker at a 2' position of a ribose.
76. (Currently Amended) A method according to claim 51, wherein said nucleic acid is attached to said linker at a 3' position of a ribose.
77. (Currently Amended) A method according to claim 51, wherein said nucleic acid is attached to said linker at a base of said nucleic acid.
78. (Currently Amended) A method according to claim 51, wherein said nucleic acid is attached to said linker at a phosphate linkage of said nucleic acid.
79. (Currently Amended) A method according to claim 51, wherein said agent is an intercalating agent.
80. (New) A method of detecting at least one hybridization complex comprising a target nucleic acid, said method comprising:
- a) adding a target nucleic acid to an array to form at least a first hybridization complex, said array comprising a solid support having a plurality of regions, each region comprising an electrode and a self-assembled mixed monolayer comprising
    - i) blocking moieties, having a first end attached to said electrode, wherein said blocking moieties shield nucleic acids from said electrode; and
    - ii) at least one modified nucleic acid comprising a nucleic acid and a linker moiety having a first and second end;
 wherein said first end of said linker is attached to said electrode and said second end is covalently attached to said nucleic acid; and
 wherein said modified nucleic acid the formula:



wherein:

SCM is a sulfur-containing moiety, wherein said sulfur containing moiety is attached to said electrode;

$\text{R}_1$  and  $\text{R}_2$  are independently selected from the group consisting of hydrogen and

substituent groups; and  
n is an integer from 3 to 50; and

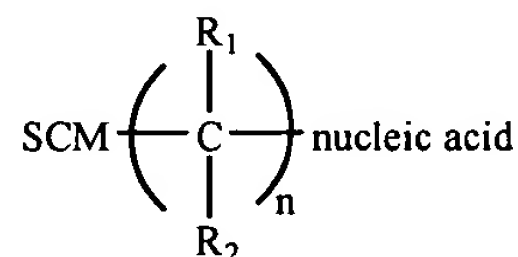
wherein at least two different regions comprise different probe nucleic acids;  
b) adding an agent that distinguishes between single and double stranded nucleic acids; and  
c) detecting the presence of said first hybridization complex.

81. (New) A method of detecting at least one hybridization complex comprising a target nucleic acid, said method comprising:

a) adding a target nucleic acid to an array to form at least a first hybridization complex, said array comprising a solid support having a plurality of regions, each region comprising an electrode and a self-assembled mixed monolayer comprising

i) branched molecule blocking moieties, having a first end attached to said electrode, wherein said blocking moieties shield nucleic acids from said electrode; and

ii) at least one modified nucleic acid comprising a nucleic acid and a linker moiety having a first and second end;  
wherein said first end of said linker is attached to said electrode and said second end is covalently attached to said nucleic acid; and  
wherein said modified nucleic acid the formula:



wherein:

SCM is a sulfur-containing moiety, wherein said sulfur containing moiety is attached to said electrode;

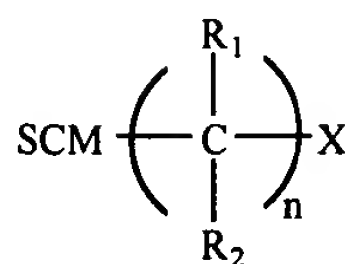
R<sub>1</sub> and R<sub>2</sub> are independently selected from the group consisting of hydrogen and substituent groups; and

n is an integer from 3 to 50; and

wherein at least two different regions comprise different probe nucleic acids;  
b) adding an agent that distinguishes between single and double stranded nucleic acids; and  
c) detecting the presence of said first hybridization complex.

82. (New) A method according to claim 80 or 81 wherein said first end of said blocking moieties is attached to said electrode via a sulfur linkage.

83. (New) A method according to claim 80 or 81 wherein said blocking moieties have the formula:



wherein

SCM is a sulfur-containing moiety, wherein said sulfur containing moiety is attached to said electrode;

R<sub>1</sub> and R<sub>2</sub> are independently selected from the group consisting of hydrogen and substituent groups;

n is an integer from 3 to 50; and

X is a terminal group.

84. (New) A method according to claim 80, wherein said blocking moiety is a branched molecule.

85. (New) A method according to claim 80 or 81, wherein said array comprises a plurality of different blocking moieties.

86. (New) A method according to claim 80 or 81, wherein for said linker moiety,  
SCM is a thiol containing moiety;  
R<sub>1</sub> and R<sub>2</sub> are hydrogen;  
n is 16; and  
Y is oxygen.

87. (New) A method according to claim 80 or 81, wherein n is ≥ 6.

88. (New) A method according to claim 80 or 81, wherein said blocking moiety comprises a phosphorus-containing moiety.

89. (Canceled)

90. (New) A method according to claim 80 or 81, wherein said nucleic acid is attached to said linker at a 2' position of a ribose.

91. (New) A method according to claim 80 or 81, wherein said nucleic acid is attached to said linker at a 3' position of a ribose.

92. (New) A method according to claim 80 or 81, wherein said nucleic acid is attached to said linker at a base of said nucleic acid.

93. (New) A method according to claim 80 or 81, wherein said agent is an intercalating agent.